

CLAIMS

1. A method of making wet rolls, comprising:
providing a web of material;
applying a wetting solution to the web to produce a wet web;

5 and
winding the wet web into a roll.

2. The method of claim 1, wherein the wetting solution is applied at an add-on greater than about 25%.

10 3. The method of claim 1, wherein the wetting solution is applied at an add-on between about 25% and about 700%.

4. The method of claim 1, wherein the wetting solution is applied at an add-on between about 50% and 400%.

5. The method of claim 1, wherein the wetting solution is applied at an add-on between about 100% and 350%.

15 6. The method of claim 1, wherein the wetting solution is applied at an add-on between about 150% and 300%.

7. The method of claim 1, wherein the wetting solution is applied at an add-on between about 200% and 250%.

20 8. The method of claim 1, wherein the web travels at a speed of at least 60 meters per minute.

9. The method of claim 1, wherein the web travels at a speed of at least 80 meters per minute.

10 11. The method of claim 1, wherein the web travels at a speed of at least 150 meters per minute.

12. The method of claim 1, wherein the web of material travels at a speed of at least 300 meters per minute.

13. The method of claim 1, wherein the roll is coreless.

14. The method of claim 1, wherein the web comprises a wet-formed basesheet.

15. The method of claim 1, wherein the web comprises a non-woven basesheet.

16. The method of claim 1, wherein the web comprises a water-dispersible binder.

17. The method of claim 1, wherein the method is performed in an environment which is substantially free of contaminants.

18. The method of claim 1, wherein the wetting solution is uniformly distributed in the wet web.

19. A method of making wet rolls, comprising:
providing a web of material from a source;
controlling the draw of the web from the source;
perforating the web;
positioning the perforated web adjacent a wetting apparatus;
applying a wetting solution to at least one side of the web with an add-on of at least about 25% to yield a wet web; and
winding the wet web into a roll.

20. The method of claim 19, wherein the providing comprises:
obtaining a roll of web material; and
unwinding the roll.

21. The method of claim 19, wherein the providing comprises:
combining at least two web plies into a single web.

21 22. The method of claim ¹⁸19, wherein the providing comprises:
manufacturing a basesheet; and
feeding the basesheet to an apparatus for wetting and winding
the web.

5 23. The method of claim ¹⁸19, wherein the web travels at a speed of
at least 60 meters per minute.

23 24. The method of claim ¹⁸19, wherein the wetting solution comprises
salt.

10 25. The method of claim ¹⁸19, wherein the wetting solution is applied
with an add-on between about 25% and about 700%.

25 26. The method of claim ¹⁸19, wherein the wetting solution is applied
at an add-on between about 50% and 400%.

26 27. The method of claim ¹⁸19, wherein the wetting solution is applied
at an add-on between about 100% and 350%.

15 28. The method of claim ¹⁸19, wherein the wetting solution is applied
at an add-on between about 150% and 300%.

29 29. The method of claim ¹⁸19, wherein the wetting solution is applied
at an add-on between about 200% and 250%.

20 30. The method of claim ¹⁸19, wherein the positioning, applying, and
winding are performed in an environment which is substantially free of
contamination.

30 31. The method of claim ¹⁸19, wherein the roll is coreless.

31 32. A method of making a wet coreless roll comprising:
a) providing a wet web of material;
25 b) breaking the wet web and forming a cigarette from the
leading edge of the break;

c) forming a roll of the wet web around the cigarette in a roll forming pocket;

d) separating the wet web roll from the web while repeating step b); and

5 e) discharging the separated wet web roll from the roll forming pocket.

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33. The method of claim 32, wherein the roll forming pocket comprises a first roller, a second roller, and a third roller.

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10 34. The method of claim 32, wherein the roll forming pocket comprises a first roller, a second roller, and a third roller; the wet web contacting the first roller, the second roller, and the third roller; the first, second and third rollers rotating in the same circular direction; and the second roller rotating in a circular direction opposite from the direction of movement of the wet web.

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15 35. The method of claim 32, further comprising perforating the web.

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36. The method of claim 35, further comprising making the break of step b) along a line of perforation.

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37. The method of claim 32, wherein the method is performed in an environment which is substantially free of contaminants.

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20 38. The method of claim 32, wherein the web travels at a speed of at least 60 meters per minute.

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39. The method of claim 32, wherein the wet web comprises an add-on of a wetting solution of at least about 25%.

25 40. A method of making wet coreless rolls comprising:
providing a wet web;
winding the wet web into a roll using a roll forming pocket;

the roll forming pocket comprising a first roller, a second roller and a third roller; the wet web contacting the first roller, the second roller, and the third roller; the first, second and third rollers rotating in the same direction; and the second roller rotating in a direction opposite from the direction of movement of the wet web; and

discharging the wet web roll from the roll forming pocket.

41. The method of claim ³⁹40, wherein the wet web is made by applying a wetting solution to a basesheet.

42. The method of claim ⁴⁰41, wherein the wetting solution is applied at an add-on greater than about 25%.

43. The method of claim ⁴⁰41, wherein the wetting solution is applied at an add-on between about 25% and about 700%.

44. The method of claim ⁴⁰41, wherein the wetting solution is applied at an add-on between about 50% and 400%.

45. The method of claim ⁴⁰41, wherein the wetting solution is applied at an add-on between about 100% and 350%.

46. The method of claim ⁴⁰41, wherein the wetting solution is applied at an add-on between about 150% and 300%.

47. The method of claim ⁴⁰41, wherein the wetting solution is applied at an add-on between about 200% and 250%.

48. The method of claim ⁴⁰41, wherein the wetting solution comprises salt.

49. The method of claim ³⁹40, wherein the method is performed in an environment which is substantially free of contaminants.

50. An apparatus for wetting and winding a substrate, comprising:

means for applying a wetting solution to the substrate to form a wet substrate; and

means for winding coreless rolls of the wet substrate.

5 51. The apparatus of claim ⁴⁹50, further comprising a means for perforating the substrate.

 52. The apparatus of claim ⁴⁹50, wherein the means for applying a wetting solution distributes the wetting solution evenly along the substrate.

10 53. The apparatus of claim ⁴⁹50, wherein the means for applying a wetting solution comprises a means for increasing the absorption rate of the solution in the substrate.

 54. The apparatus of claim ⁴⁹50, wherein the wetting solution is present in the wet substrate in an add-on of at least about 25%.

 55. The apparatus of claim ⁴⁹50, wherein the apparatus is in an environment which is substantially free of contaminants.

15 56. An apparatus for wetting and winding a substrate, comprising:
 a wetting apparatus; and
 a winding apparatus;
 wherein the winding apparatus can form wet coreless rolls with an add-on of at least about 25%.

20 57. The apparatus of claim ⁵⁵56, further comprising a perforating apparatus.

 58. The apparatus of claim ⁵⁵56, wherein the wetting apparatus is a fluid distribution header.

25 59. The apparatus of claim ⁵⁵56, wherein the wetting apparatus is a spray boom.

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Figure 1 is a schematic representation of the experimental design. It shows a vertical timeline of events. At the top, 'Pretest' is indicated. Below it, 'Baseline' is marked. The main experimental phase is divided into 'Training' and 'Test' periods. The 'Training' period includes 'Block' and 'Random' practice conditions. The 'Test' period includes 'Block' and 'Random' practice conditions. The timeline ends with 'Posttest'.